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WORKSHOP REPORT

Confidence & Compliance with the Biological Weapons Convention

Filippa Lentzos
Department of Social Science, Health & Medicine
King's College London

December 2014

GCSP and KCL would like to thank all the workshop participants for their contribution to the constructive and engaging discussions.

Electronic version and additional details on the project can be found at **www.filippalentzos.com**.

This report has been funded with the support of the Foreign & Commonwealth Office in London. The contents or findings and recommendations expressed herein are the responsibility of King's College London and do not necessarily represent the views of the Foreign & Commonwealth Office.

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Executive Summary

This document reports on a workshop titled 'Confidence & Compliance with the Biological Weapons Convention (BWC)' held in Geneva on 3 August 2014, and jointly organized by King's College London and the Geneva Centre for Security Policy.

The workshop focused on three key aspects of confidence and compliance with the BWC:

- To what extent is the BWC verifiable?
- Do the CBMs build confidence?
- What would a legally-binding mechanism look like today?

The workshop provided a unique forum for cross-Group state party representatives, civil society experts, UN agencies and other BWC stakeholders to interact in an environment that facilitated a fruitful debate on these questions. The debate was stimulated through a mix of expert presentations, plenary discussion and dialogue in smaller break-out groups.

Verifiability

Presentations at the workshop provided empirically rich detail about biological verification processes both in routine on-site inspections and in investigations of alleged BWC violations. The resounding response to whether the BWC is verifiable was "yes". It is possible for skilled inspectors to distinguish legitimate from cheating facilities while not compromising proprietary information; it is also possible to uncover a bioweapons programme even in situations where elaborate concealment strategies are deployed.

Confidence

Approaching the question of whether CBMs build confidence from a new angle, the workshop explored the larger question of what 'confidence' in the BWC means for different people and states.

Some of the practices and conditions that inhibit confidence in the CBMs were presented to encourage further thinking about confidence in the BWC context. These resonated with many of the workshop participants, and included: limited inquiry into and public testing of CBMs' content and purposes; lack of a mechanism for testing the veracity or completeness of CBM reports; CBMs limited accessibility; perception of low utility; and accusations of 'doing politics' directed at those who raise criticisms.

The response to the question "Do the CBMs build confidence?" that emerged from the workshop was "yes, the CBMs do build confidence and they are an important aspect of building confidence in the BWC, but CBMs should not be equated with confidence." In short, confidence-building goes beyond the CBMs.

A legally-binding mechanism

Different views on what a legally-binding mechanism would look like today were expressed at the workshop. A number of participants argued for a multilaterally negotiated, legally-binding and verifiable provision that would implement all articles of the Convention in a balanced and comprehensive manner. Some were more specific, arguing for an implementing agency – the Organisation for the Prohibition of Biological Weapons (OPBW) – responsible for investigating allegations of bioweapons use and suspicious disease outbreaks, assisting and protecting against bioweapons, promoting international cooperation, confidence building measure, national implementation and monitoring developments in science and technology. The OPBW would be supported by a professional Technical Secretariat and policy-making organs (Executive Council and Conference).

Others highlighted the different political, security and technical contexts of today arguing that old concept won't work. New thinking is required, and two principal purposes for a legally binding mechanism were put forward: to analyse implementation and to coordinate cooperation and assistance. Structurally, it was argued for a small organisation focused on 'declaration management' (which could include inspections), cooperation and assistance, an executive mechanism (of rotating, elected members but not a 'council'), an intersessional process with decision-making power, and Review Conferences that move away from an Article-by-Article review and instead take on a stronger role of the highest decision-making body.

Finding a middle ground, some acknowledged that there are imperfections in the BWC but that it is still workable. They argued not to amend or add to the Convention itself, but rather to strengthen it incrementally through extended understandings, agreed procedures and politically-binding commitments, all accumulated through successive Review Conference and recorded in their Final Documents.

Airing these differences in views and entering into dialogue about them well in advance of the upcoming Review Conference in 2016 was in large part the aim of the workshop. The positive feedback received on the workshop suggests a significant step was taken in that direction.

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Introduction

This document reports on a workshop titled 'Confidence & Compliance with the Biological Weapons Convention' held in Geneva on 3 August 2014, and jointly organized by King's College London and the Geneva Centre for Security Policy.

The aim of the workshop was to bring together some of the central actors shaping the debate on these key substantive issues to exchange views in preparation for the upcoming 2016 Review Conference.

The workshop was organised around three sessions that focus on different aspects of confidence and compliance, each introduced by a set of presentations:

Session 1: To what extent is the BWC verifiable?

Session 2: Do the CBMs build confidence?

Session 3: What would a legally-binding mechanism look like today?

The first part of this report summarises the presentations made and the discussions that occurred; the second part of the document analyses the key themes emerging from the discussions.

The meeting was held under the Chatham House Rule in order to facilitate open and productive discussion:

When a meeting, or part thereof, is held under the Chatham House Rule, participants are free to use the information received, but neither the identity nor the affiliation of the speaker(s), nor that of any other participant, may be revealed.

The speakers at the workshop have given their consent for their names to be used in the summary of their presentations and related citations.

The Twitter hashtag #BWCMX was used for the workshop and for the subsequent Meeting of Experts. You can view comments made by participants and others there, and we encourage readers to use this hashtag to post further comments about this report.

The workshop was part of a project funded by the United Kingdom Foreign and Commonwealth Office titled 'Beyond 'Hard Law': Strengthening the Biological Weapons Convention through the Confidence Building Measures (CBM) Regime'. More details about the project are available at **www.filippalentzos.com** including a short background document entitled 'The BWC: Compliance, Transparency & Confidence' published in Disarmament Times, the quarterly publication of the Non-Governmental Organization (NGO) Committee on Disarmament, Peace and Security on the work happening in and around the United Nations, its Member States, and non-governmental organizations.

Summary of Discussions

Session 1 Introduction

The first session of the workshop tackled one of the most deep-seated and fundamental questions faced by the treaty: To what extent is the BWC verifiable?

Unusually for an arms control treaty, the 1972 BWC was agreed without on-site verification mechanisms to deter or to safeguard against treaty violations. Some states maintain that the nature of biological weapons is such that they are inherently impossible to verify; not only can significant quantities of biological agents be produced in small and readily concealable facilities, but most of the equipment required (e.g. fermenters, centrifuges, freeze-dryers) is ubiquitous in public, private and commercial laboratories. Others argue that while the same level of accuracy and reliability as the verification of, for example, nuclear arms control treaties is unattainable, it is possible to build a satisfactory level of confidence that biology is only used for peaceful purposes. They use the term 'verification' as the description of a set of activities – declarations, visits and investigations – without making a value judgement about the level of assurance of compliance that could be achieved by this set of activities.

Clearly, a fully effective verification system for the BWC is exceptionally difficult. The multiyear negotiations to create a legally binding verification protocol for the BWC broke down in 2001 after the US government pronounced the draft procedures inadequate to detect cheaters yet likely to compromise trade secrets and national security. The US has repeatedly stated that the BWC is "unverifiable," most recently at the 2011 Review Conference when Secretary of State Hillary Clinton said that it was "not possible" to fashion a verification regime that could enhance confidence that states were in compliance with the BWC.

In this session, Amy Smithson, a long-standing authority on biological weapons and the BWC who specialises in in-depth field research, presented two of her research projects on BWC verification. The first presentation provided detailed counter-intuitive data on how the US biopharmaceutical industry views the potential to monitor the BWC. The second presentation detailed the experiences of bioweapons verification by the UNSCOM inspectors in Iraq.

Amy Smithson – "Ground truth" from industry experts

In the first project described by Smithson, she had solicited the views of industry scientists with extensive experience in research, development, and production in large, multinational companies and smaller pharmaceutical and biotechnology companies. She first asked them to visualise the facilities they had worked in and to articulate what inspectors would need to do to catch illicit weapons activity at those sites. After they had assembled their inspection methodology, she had asked the industry scientists to describe concerns they would have if their inspection strategy, tactics and tools were applied at their

respective facilities. The group identified concerns and then agreed on ways to address those concerns while still satisfying the need of the inspectors to ascertain BWC compliance. In addition, Smithson asked the industry scientists to rate how effective their inspection methodology would be in practice and to compare how intrusive their inspection methodology was in comparison to the inspections of the Food and Drug Administration (FDA).

The group of biopharmaceutical industry insiders crafted a detailed monitoring strategy. To begin with, the industry experts recommended that the inspectors rely primarily on open source data, which is likely to be more plentiful, nuanced, and current than a country's declaration. Legitimate pharmaceutical and biotechnology companies make considerable information available about their current and upcoming products, capabilities, and business objectives and practices to attract customers, investors and media attention to increase sales. Once on site, the industry experts' inspection methodology centers on evaluating whether the information the inspectors collect is inconsistent with the facility's stated purpose.

After an overview briefing of the facility to be inspected, the industry scientists proposed an extensive facility tour, with the host facility giving the inspectors critical documents, such as site maps and a piping-and-instrumentation diagram, that would allow them to zero in on unusual features or alterations that merited an explanation, as well as any efforts by host officials to steer the inspectors away from important areas. The inspectors should have access to laboratories, the production floor, the product purification area, supply storerooms, the medical facility, the waste treatment area, and the animal facility, without compromising test protocols there. The industry experts recommended the standard inspection tools, namely observation, document reviews, and interviews. They were reticent to allow inspectors to photograph or video the inspection, instead proposing the "work-around" of providing additional information to address the inspectors' inquiries. Of note, the industry experts proposed taking in-process samples if inspectors found indications of non-compliance. Samples would be stored in an onsite lock-box as host officials worked with the inspectors to resolve the compliance concerns. If those concerns persisted, the samples would be analyzed on site using a validated assay or in a certified third-party laboratory. Furthermore, the industry experts backed the notion of a challenge inspection on the heels of a routine inspection that unearthed compliance concerns that could not be resolved. Importantly, the industry experts' BWC monitoring proposal could not be more contrary to the position of the PhRMA, the Pharmaceutical Manufacturers Association, which contends that just allowing inspectors on site would jeopardize trade secrets.

Next, the industry scientists argued that skilled inspectors employing their monitoring strategy, tactics and tools would be able to distinguish legitimate from cheating facilities while not compromising proprietary information. The industry experts believed the inspectors would really be able to get to the bottom of any possible inconsistencies with a facility's stated purpose in certain physical areas of the facility, such as the waste treatment area, and by poring over documents. Substituting a fake set of documents to mask illicit military activity, the industry experts said, would be a monumental

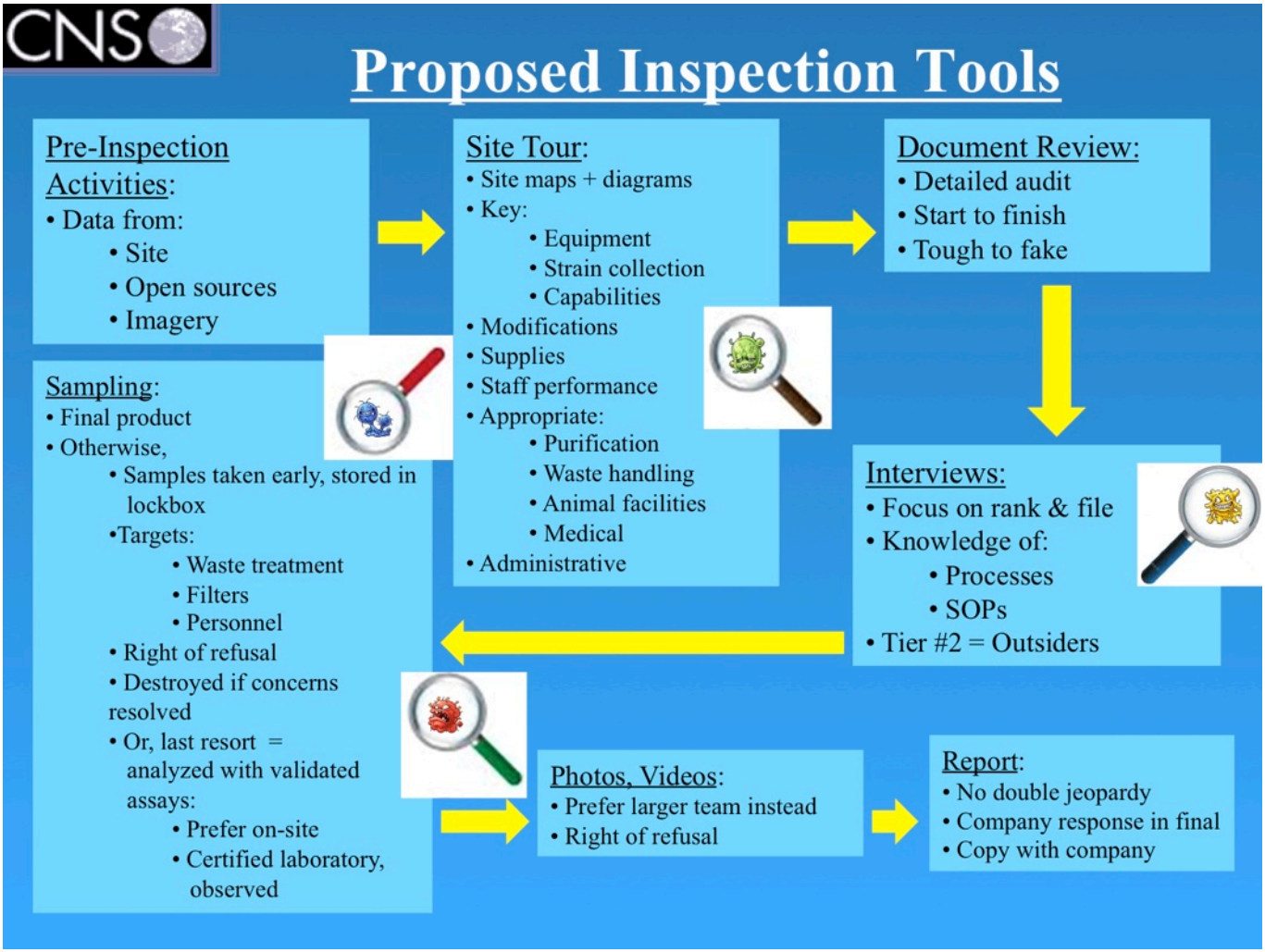

Figure 1: US biopharmaceutical industry insiders' proposed inspection tools.

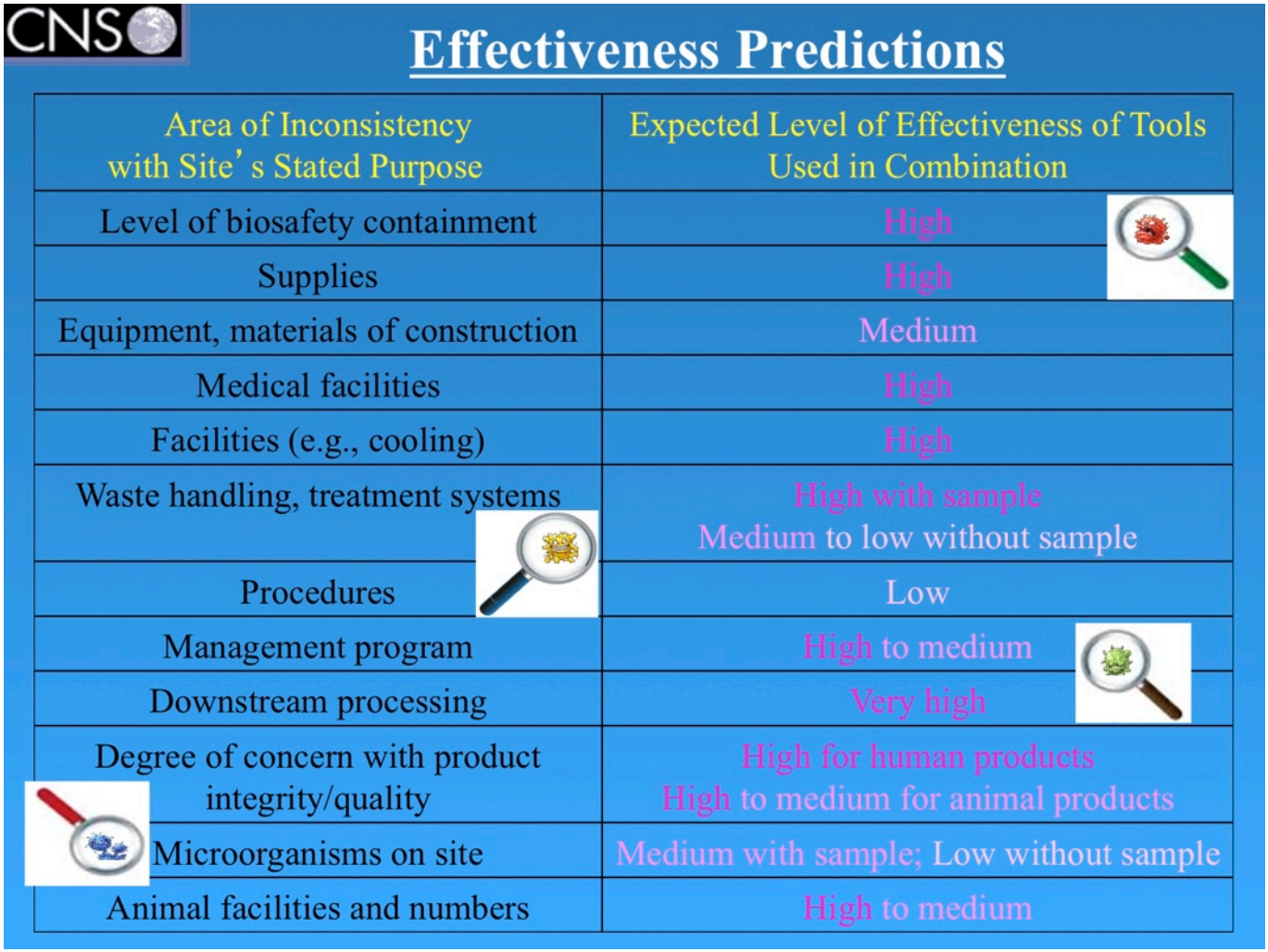

Figure 2: US biopharmaceutical industry insiders' expected level of effectiveness of tools used in combination.

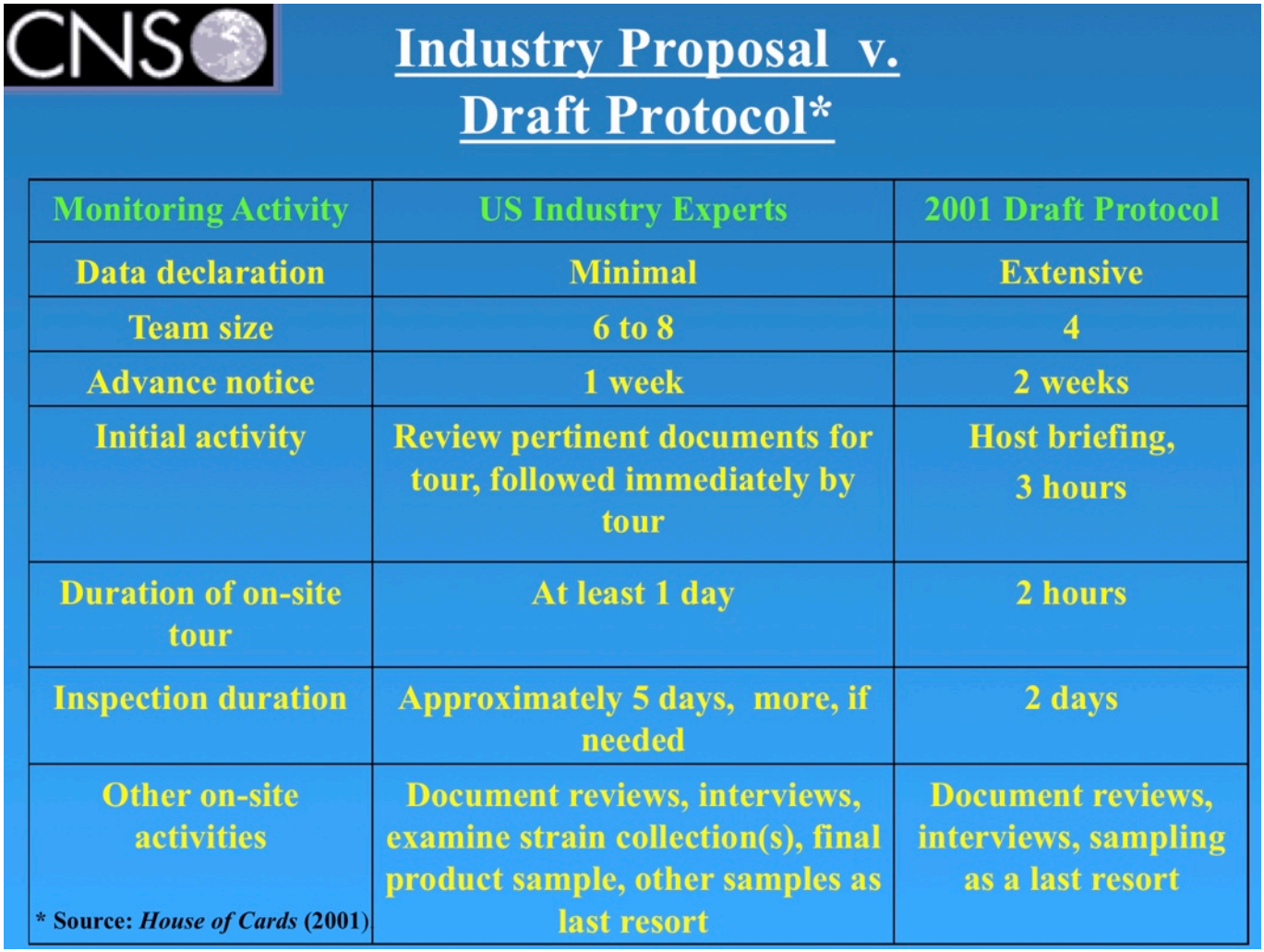

Figure 3: US biopharmaceutical industry insiders' proposed inspection protocol versus the draft BWC protocol.

task. As the slide in Figure 2 shows, the industry experts gave a majority of high inspection effectiveness ratings. Clearly, the industry experts believed that their verification proposal would work in practice. And, as it turned out, the UNSCOM inspectors proved the industry experts right. Much of what the industry experts proposed for monitoring the BWC bears a close resemblance to what UNSCOM inspectors did successfully when they unveiled the bioweapons programme that Iraq spared no effort to hide from them.

"The US biopharmaceutical industry insiders argued for much more stringent inspection procedures than those contained in the draft BWC protocol."

When the industry experts assembled a trial inspection plan to test their proposal, they compared the intrusiveness of their BWC verification proposal to that of the inspections that the FDA conducts. The industry scientists identified 16 similarities between these two inspection types, seven differences that they believed were unlikely to have any impact on the inspected facility, and another seven differences where their proposed BWC inspection practices would be less demanding than FDA inspections. Of note, the industry experts pegged just two differences where their proposed practices may be more demanding than FDA inspections. First, their BWC inspection team would be on site about five days. FDA teams often do not stay that long, but the industry group pointed out that the FDA sometimes shows up with no notice and stays as long as it deems necessary. Second, the FDA usually sends two or three inspectors. The industry experts believed that sites could accommodate the larger BWC inspection team that they propose, but the accompanying group of U.S. government escorts, who would also require a host facility escort for the duration of the inspection, might stress available manpower.

The industry experts drafted and assessed their inspection protocol before Smithson showed the group the details of the BWC protocol as it stood in 2001. One of the experts, Dr. George Pierce, summed up their reaction to the draft protocol as follows: "'D' is a good grade because that's really the worst grade you can get. Sometimes an 'F' shows a little innovation." Smithson concluded the presentation by highlighting that the U.S. biopharmaceutical industry insiders she spoke argued for much more stringent inspection procedures than those contained in the draft BWC protocol.

Key lessons from the project were 1) that governments can be more protective of industry than industry would be of itself, and 2) you need to ask the "right" people into the process – the scientists and facility line managers, not the 'suits'.

Amy Smithson – Counsel from UNSCOM inspectors

Smithson noted that while the industry experts' views remain in untested proposal form, the UN Special Commission on Iraq (UNSCOM) provides a treasure trove of biological field inspection experience.

The ceasefire conditions of the 1991 Gulf War gave UNSCOM the role of overseeing Iraq's disarmament, pitting the inspectors against a country determined to retain its weapons of mass destruction and long-range missiles. When UNSCOM's biological inspectors landed in Baghdad, Iraq had already established a strategy to conceal the bioweapons programme, complete with tactics such as their requirement to be able to move sensitive materials or documents on fifteen minutes notice. Iraq's bioweaponeers were also put on notice that they would be killed if they revealed anything to the inspectors. Next, this small group of inspectors knew full well that conventional wisdom held that inspections could not uncover a covert bioweapons programme. Iraq's first biological declaration to UNSCOM was null: Iraq claimed to have no biological facilities.

The final factor working against the UNSCOM inspectors was sketchy intelligence. The "signatures" of biological weapons programmes are far less discernible than nuclear or chemical weapons programmes. Even the telltale signs that do exist, such as the presence of high-level biosafety containment, are not always reliable. Prior to the 1991 Gulf War, U.S intelligence did not identify Iraq's main bioweapons production facility, Al Hakam, even though this site had a layout very similar to Iraq's chemical weapons production site, Al Muthanna. In the late 1980s, Iraq powered up its germ weapons program with huge purchases of growth media, the nutrients needed for a biological seed culture to replicate itself. Before that, under the guise of legitimate research Iraqi scientists ordered the seed cultures for anthrax, botulinum toxin and other agents from culture collections in the United States and France. U.S. intelligence apparently did not notice these activities, but in the mid-1990s Israeli intelligence told UNSCOM that Iraq may have purchased a lot of growth media. In 2005, the Commission on the Intelligence Capabilities of the United States Regarding Weapons of Mass Destruction stated that the U.S. intelligence community "substantially underestimated the scale and maturity of Iraq's" bioweapons programme before the 1991 Gulf War and that the U.S. intelligence assessment about the threat of Iraq's rejuvenated biological and chemical weapons programmes, notably its alleged mobile bioweapons production trailers, prior to the 2003 Gulf War was "simply wrong."

So, to begin with the odds were stacked against UNSCOM's biological inspectors, which makes what transpired during UNSCOM's first two biological inspections all the more noteworthy. When UNSCOM biological inspectors first landed in Baghdad on 2 August 1991, the Iraqis switched from complete denial of a programme to a hide-in-the-open strategy, declaring a programme of military research that was applicable for defensive or offensive purposes. Over the next few days, the Iraqis said nothing that was consistent with biodefense work, but the inspectors saw hallmarks of an offensive weapons programme. At Salman Pak, the inspectors could see fresh bulldozer tracks from where Iraqis had

bulldozed the aerosolization chamber building and the incinerator, two locations that would have provided the inspectors with incriminating evidence. In fact, the Iraqis left the bulldozer sitting right there, making the "sanitization" of the site all the more evident. The inspectors tracked down an aerosolization chamber large enough to hold primates as test subjects, and they found large primate cages. The Iraqis blurted out that the head of their biological research programme reported to Kamal Hussein, who was known to be a central figure in Iraq's unconventional weapons programs. The Iraqis described their research to determine the LD50 of pathogens, meaning the amount of agent they would need to disperse to kill fifty per cent of the target population. Such research does not jibe with a defensive programme, and the Iraqis were working with a strain of anthrax, the Vollum strain, that the United States had weaponized. Scientists typically keep copious records of their work, but Iraq's bioweaponeers gave the inspectors a scant ten research papers. In short, although the inspectors found no biological weapons per se, they saw and heard plenty that pointed to an offensive bioweapons programme.

The same was true of UNSCOM's second inspection in mid-September 1991. The Iraqis had no real explanation for why the only biosafety level 3 facility in the country, Al Daura Foot and Mouth Disease Vaccine Facility, was operating at a fraction of its capacity even though the facility emerged unscathed from the war. Later, Iraq would admit that Saddam commandeered Al Daura to make warfare agent, and that the alterations the Iraqis made to the plant crippled it. Iraq first declared Al Hakam as a fermenter repair and storage facility, but as the inspectors entered Al Hakam the Iraqis switched stories, claiming the plant was making chicken feed, or single cell protein. UNSCOM inspectors quickly discovered that:

- Al Hakam's layout was wholly inconsistent with a commercial plant;
- little economic justification existed for Al Hakam's purported product;
- seed cultures at the site were inappropriate for a single cell protein plant but typical of a facility engaged in weapons work;
- Al Hakam was abnormally clean and did not appear to be producing much of anything;
- the plant's supposed director did not know basic facts, such as the number of people he employed and Al Hakam's production rates; and,
- the facility had oddly stringent security, not to mention dummy bunkers.

To top it off, trade journals or newspapers contained not a word about Al Hakam. A for-profit company would court the media to generate publicity to attract customers. In short, in its first two inspections, UNSCOM's biological inspectors gathered significant evidence of a covert offensive bioweapons programme despite Iraq's efforts to hide the programme, and they identified two purportedly commercial plants, Al Daura and Al Hakam, as likely to be involved in Iraq's bioweapons work.

For approximately two and a half years, UNSCOM focused on other disarmament priorities in Iraq and did not conduct any dedicated biological inspections. When UNSCOM ramped up its biological inspections again in mid-1994, within several

months the biological inspectors had collected sufficient evidence to cause Iraq's cover stories to crumble and Iraq to admit on July 1, 1995 that it had produced biowarfare agents. The only intelligence tips the inspectors had to go on as they shredded Iraq's cover stories were that Iraq apparently purchased large quantities of growth media, that Projects 85 and 324 were somehow linked to a possible bioweapons programme, and that the Iraqis had tried to purchase high-containment ventilation equipment for buildings E and H, without any further specification as to the location of these projects or buildings.

To unmask the programme, UNSCOM inspectors tripped up the Iraqis in interviews, gaining key insights into the architecture and activity of the Iraqi bioweapons programme. UNSCOM sampled a sprayer on a second Al Hakam production line that the Iraqis claimed was making biopesticide. The sample contained ultra-small particles of Bacillus thuringiensis; particles under ten micros in size would be inoperable for a biopesticide but ideal for a biowarfare agent. UNSCOM gathered several hundred documents from Oxoid, Fluka, Niro Atomizer, Chemap, Olsa, Karl Kolb and other suppliers to Iraq's programme. Analysis of these documents allowed the inspectors to reverse engineer Iraq's bioweapons programme, even determining that Al Hakam probably became operational in March 1988. UNSCOM's ability to reverse engineer Iraq's programme was also aided when UNSCOM broke the codes on Iraq's procurement documents, enabling them to determine Iraq's plans for various items they purchased. The inspectors located 22 tons of growth media, but that left 17 tons missing. By that time, the inspectors knew Iraq had used the missing growth media to make biowarfare agents. As they pressed the Iraqis to explain where it went, the Iraqis slipped up and called Al Hakam Project 324. The Iraqis also turned over the engineering diagrams for Al Hakam, and there, clear as day, the research building and animal house were labelled buildings E and H. Contrary to popular thinking, UNSCOM inspectors earned these and other revelations about Iraq's bioweapons programmes during routine inspections, not during no-notice or challenge inspections.

"UNSCOM's inspectors did what conventional wisdom says is impossible: they distinguished legitimate facilities from those involved in a weapons programme and unearthed a covert bioweapons programme."

According to Iraqi Ministry of Health statistics, Iraq used barely a kilogram of growth media annually for hospital diagnostics, so the UNSCOM inspectors knew that Iraq's assertion that hospitals had consumed the 17 tons of missing growth media was ludicrously false. The inspectors presented the Iraqis with

an array of incriminating facts to paint them into a corner, forcing the mea culpa that Iraq made but destroyed its stocks of anthrax and botulinum toxin agent in 1990. Right away, the inspectors knew that Iraq was still not fully coming clean about its bioweapons programme. After all, logic dictates that no state would go to all the trouble to make a super-secret weapon, only to demolish it before going to war. Moreover, the inspectors already had a handle on Iraq's biological delivery systems, including bombs, missiles and a sophisticated, finely crafted spinning dispersal device that a German company sold to Iraq. Therefore, in July 1995 UNSCOM Executive Chairman Rolf Ekeus briefed the United Nations Security Council that the inspectors contended that the Iraqi declaration was still incomplete, that Iraq had filled munitions with biowarfare agents. Despite Iraq's extensive efforts to hide its bioweapons programme, UNSCOM's inspectors did what conventional wisdom says is impossible, they distinguished legitimate facilities from those involved in a weapons programme and unearthed a covert bioweapons programme.

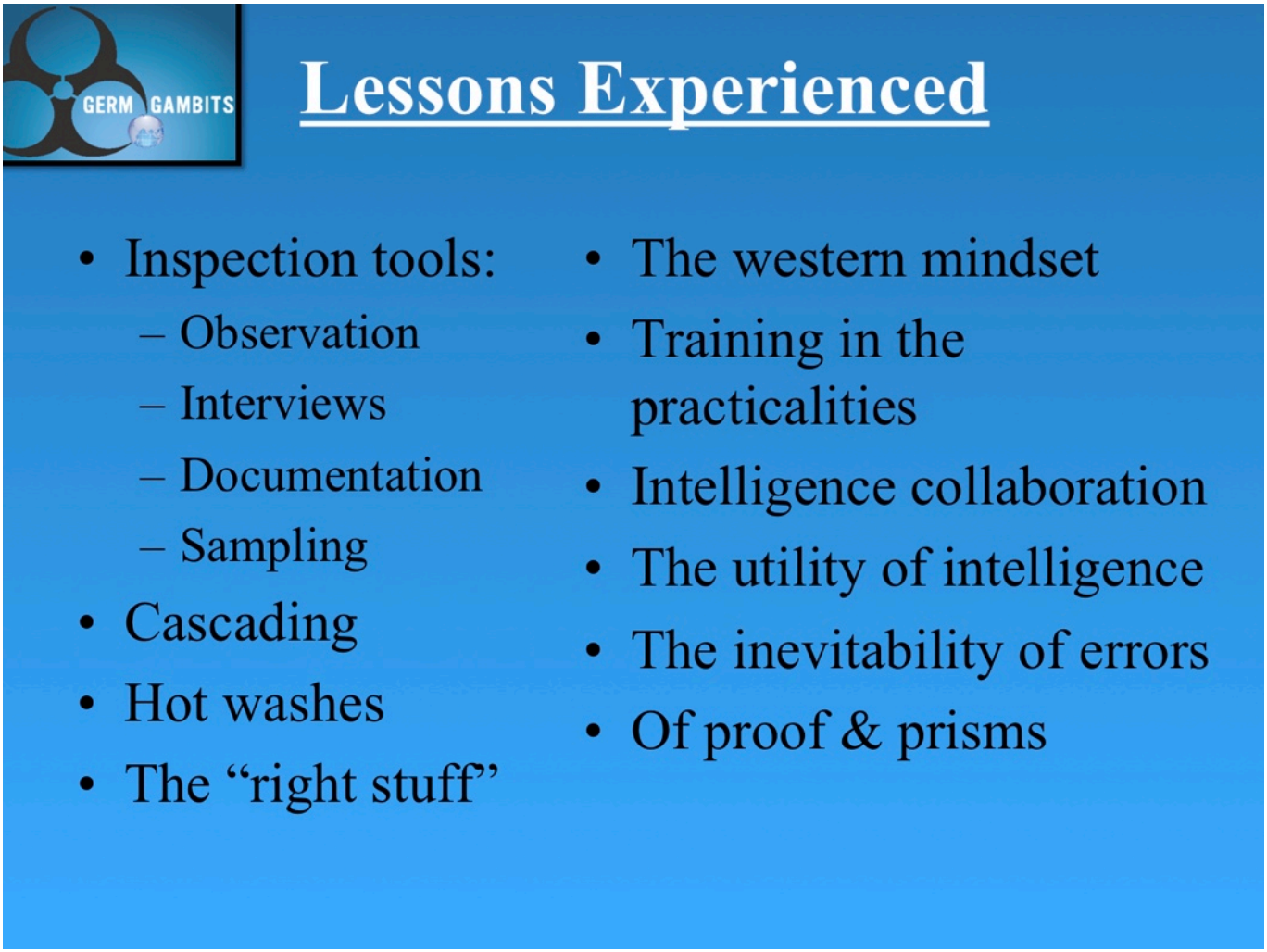

Figure 4: Lessons from the UNSCOM inspections in Iraq.

Session 2 Introduction

Session two on confidence in the BWC and the Confidence Building Measures (CBMs) was lead by Chandré Gould and Brian Rappert. They set three goals for the session:

1. To explore what 'confidence' in the Convention means for different people and states
2. To understand how confidence is inhibited
3. To find ways to improve confidence in the future

They opened the session with an exercise. On a sheet of paper, all participants were to complete the two sentences:

'For me, having confidence in the BWC means…'

'I would have more confidence in the BWC if…'

The responses were collated and reported back on to the group at the end of the session. A sample of the responses is reproduced in Figures 5 and 6.

Gould and Rappert proceeded to give a presentation on a project that examines the apparent 'diplomatic erasure' of the South African biological weapons programme. On the basis of their analysis they had developed an action map laying out the practices, conditions and consequences of rendering the non-declaration a non-issue (Figure 7).

Dividing the workshop participants into small groups, Gould and Rappert asked if the action map was an accurate reflection of the participants' own experiences in the BWC. The second question for discussion in the group focused on solutions rather than problems: What can be done to build confidence and overcome some of the binds identified?

In the final part of the session, some of the discussions from the small groups as well as the earlier exercise were shared. Gould and Rappert closed the session with some reflections and a strategy for building confidence in the BWC.

For me, having confidence in the BWC means…

…a strong norm against use and development, transparency, mutual trust between State Parties and between State Parties and publics.

…knowing the Convention is widely adhered to (universalization) without significant gaps in coverage (to risks of proliferation) has an element of transparency and verifiability (to prevent cheaters) taken seriously by its member states (implemented nationally).

…being assured that no state or entity is violating the treaty, either directly or indirectly. This would include confidence in the steps being taken to ensure that there is a clear dividing line between research for 'peaceful' and 'dual use' purposes.

…there should be some mechanism to verify/investigate alleged breaches.

…states genuinely want to reach consensus solutions on the issues, rather than use it as a vehicle for the same tired arguments.

…a credible, verifiable, legally binding multilaterally negotiated provision in order to implement all articles of the Convention in a balanced and comprehensive manner.

…no state is producing bioweapons or developing offensive programs; states believe the BWC is in their interest; states understand their obligations and ensure national entities abide by the Convention; and states are able to communicate and demonstrate how to implement the Convention nationally.

…"cheating" will imply costs.

…that states are taking their obligation under the Convention seriously; that states are not defeating the object and purpose of the Convention by undertaking activities that violate its provisions; that its minimum requirements are being carried out such as CBM submissions; and that if a state is unable to do so it reaches out for assistance; that states take advantage of the resources available to them under Article X from other states and IOs.

…that there is a substantial level of universality, ideally including "states of concern."

….states comply with prohibitions envisioned by the treaty, and there are effective and non-discriminatory ways of ascertaining that.

Figure 5: Select workshop participant responses to "For me, having confidence in the BWC means…"

I would have more confidence in the BWC if…

… there was a way to understand intent more (as opposed to capacity).

…it wasn't bogged down in geopolitical divisions (so that member states could actually reach common understandings to progress the efficacy of the convention).

…there was an efficient and effective verification mechanism.

…there was a provision for challenge inspections (and these were used appropriately).

…it was given greater political focus in the disarmament community.

…there was more transparency and oversight.

…it were strengthened in a legally binding manner, and an implementing agency would be set up for that purpose.

…there was a reduction in bloc behaviour.

…a multi-stakeholder approach (engagement of private/public/civil society sector) would be encouraged to implement elements of the BWC.

…regional positions continue to become more flexible (as has been the case in recent years) with more cross-regional linkages made and nurtured, and thereby putting the interests of the Convention on a higher footing.

…all state parties submitted CBM returns in timely and full manner.

…there is a verification regime, without differences between countries, so there is an equal basis for us all.

…more states parties emulated the few pioneers of compliance assessment or provided their own compliance with all BWC obligations.

…the next Review Conference would agree to a larger ISU, a less meager budget, intersessionals no longer restricted by the 2002 ban on negotiating anything, and more than two weeks in each year devoted to the BWC in the years 2017 – 2020.

…discussion of implementation was seen as a co-operative goal instead of a western objective to be balanced against assistance.

Figure 6: Select workshop participant responses to 'I would have more confidence in the BWC if…'

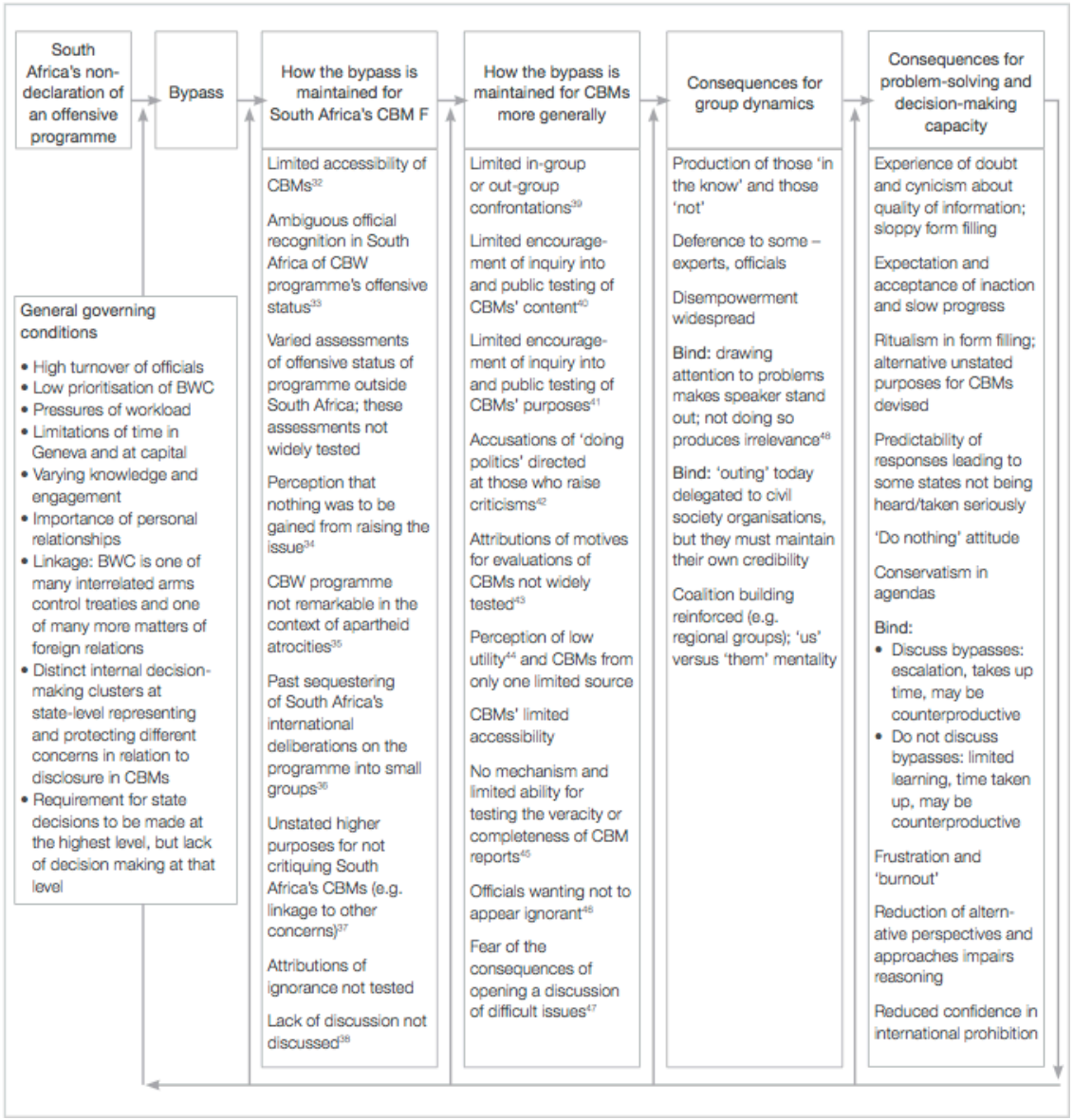

Figure 7: Action map of South Africa's failure to declare an offensive programme and how this became an non-issue in the BWC process

Chandré Gould and Brian Rappert

Gould and Rappert reported on a BWC confidence project they had been awarded under the Science & Security programme of the UK Economic and Social Research Council, the Defence Science and Technology Laboratory, and the Arts and Humanities Research Council.

Their starting point was a curiosity: Confidence is what the CBMs are for, but in practice the limitations of the CBMs do not seem to affect confidence. Using past programmes as an example, they noted that states have made incomplete and inaccurate Form F declarations, but that this does not seem to matter. Why not?

Using South Africa as a case study of how topics relevant to the BWC can become non-issues, Gould and Rappert asked: What lessons can be learned about CBM Form F and about confidence in general?

They analysed how the South African non-declaration became a non-issue for States Parties and developed an action map laying out the practices and conditions rendering the non-declaration a non-issue. They demonstrated how the bypass for the South African CBM was maintained, and how the bypass is maintained for CBMs in general. They outlined the consequences of this for group dynamics: production of those in the 'know' and those 'not'; deference to some (experts, officials); widespread disempowerment; 'outing' delegated to civil society organisations; coalition building reinforced and 'us' versus 'them' mentality.

They also focused on the consequences for problem solving and decision making: experience of doubt and cynicism about the quality of CBM information; expectation and acceptance of inaction and slow progress; ritualism in form filling; 'do nothing' attitude; conservatism in agendas; reduction of alternative perspectives and approaches impairing reasoning; reduced confidence in international norm.

Further details of the project are written up in the July 2014 Institute for Security Studies Paper *Biological Weapons Convention: Confidence, the prohibition and learning from the past,* available at www.issafrica.org.

Towards a strategy for building confidence in the BWC

The report notes that the practice of equating CBM participation with confidence is arguably commonplace in recent BWC deliberations, at least by most States Parties. This presumption expresses itself through attention to fostering greater participation as an immediate priority.

Such thinking has been subject to critique in the past. For instance, in a mid-1990s report – *Confidence building in the arms control process: A transformative view* – for the Canadian Department of Foreign Affairs and International Trade, James Macintosh argued that discussions at that time frequently conflated CBMs with confidence.

"To move forward, the defensive reasoning and routines that inhibit dialogue and learning must be addressed. Fostering confidence requires attention to interactional dimensions as well as process-related ones."

However, Macintosh argued that CBMs were only one possible operational measure of confidence and so should not be mistaken for it. Focusing on CBMs might help improve the political atmosphere for international relations, but the gains are likely to be modest and temporary unless the factors that foster a lack of confidence are addressed. As part of this, he contended that enhancing transparency is not the ultimate objective for arms control and disarmament. More information need not lead to better understanding or less suspicion. Indeed, it could increase misunderstanding and suspicion.

Gould and Rappert argued for a four-part strategy for building confidence in the BWC:

1. Confidence building beyond CBMs
2. Recognising the need for a process of transformation
3. Recognising the need for interactional transformation
4. Promoting attention to confidence

To move forward, the defensive reasoning and routines that inhibit dialogue and learning must be addressed. Fostering confidence requires attention to interactional dimensions as well as process-related ones. In other words, concerns about what is discussed by whom and where needs to be complemented with regard for how that discussion takes place.

Gould and Rappert concluded by listing a number of suggestions to encourage interactional dimensions:

- Promote accessibility of CBMs.
- Consider whether and why the South African (and others) case merits attention in the context of the Convention and the purpose of CBMs as originally expressed in 1986.
- Reduce the tendency to make speculative attributions about the reasoning of those that raise evaluations and questions, and increase advocating positions in combination with inquiry and public reflection by officials and non-officials (NGOs) alike;
- Lower the barriers to airing concerns, with particular reference to regional groupings. For example, this could be done by creating a forum or several fora in which issues concerning the content of CBMs can be raised in a non-confrontational or accusatory manner which would involve experts from all regions. Ideally this would allow for reflection on errors and reactions.
- Foster willingness to admit a lack of awareness, uncertainty, and unknowns.
- Create a climate in which candour is not penalised or seen as a weakness or admission of failure or even guilt, though this will take time and need to take into account differing cultural and political norms.
- Expand the range of subjects open for discussion at BWC meetings and allow space for new issues to emerge.
- Increase the number of inclusive, informal consultations and discussions outside of the BWC. These should be 'safe spaces' that could be facilitated by inter-government and/or non-government organizations and should allow for substantial discussion even about contentious issues.

Session 3 Introduction

After a long hiatus, discussions on ways to enhance assurance of compliance with the BWC gently restarted in the third intersessional cycle. In 2012, Australia, Canada, Japan, New Zealand and Switzerland launched a process to develop a common understanding of what compliance with the BWC means and to identify ways States Parties can better demonstrate their compliance with, and national implementation of, the treaty. Reinforcing this process were parallel developments of a compliance assessment initiative by Canada, Switzerland and the Czech Republic, and a peer review mechanism by France to reinforce assurance of compliance. Most recently, the Russian Federation launched a process to gauge interest in negotiating a legally-binding mechanism (LBM) afresh on the basis of the 1994 Ad Hoc Group mandate.

Opening and setting the scene of this last session on what a LBM would look like today was Nicholas Sims, an International Relations scholar and committed supporter of the BWC since it was first under negotiation in the late 1960s and who is considered a principal authority on the treaty. Vladimir Ladanov presented the recent Russian initiative, outlining the survey of States Parties conducted in May 2014 and the responses received so far. Speaking in their own capacities, three long-standing government experts on the BWC – Ben Steyn, John Walker and Chris Park – then gave their perspectives on what a legally-binding mechanism would look like today.

"The incremental-strengthening approach does not distract attention from an LBM as a future option – early or more distant – and it doesn't rule it out."

Nicholas Sims

In the first part of his presentation, Nicholas Sims provided a short summary of the history of LBM proposals in the BWC context. He grouped them into six analytical categories:

1. Procedures for implementing Articles V and VI to be added
2. Mechanisms specific to Article X to be added
3. Verification system to be added
4. CBMs to be made 'mandatory'
5. Measures for verifying compliance to be agreed, but not yet
6. Whole-Convention scope for a strengthening instrument

He noted that the sixth, Whole-Convention approach, mandated by the 1994 Special Conference and taken forward by the Ad Hoc Group from 1995 to 2001, has the evident advantage that it avoids privileging one Article above another. It favours wide-scope coverage of the whole Convention and a well-balanced outcome to any LBM

negotiations. But, even so, the history of 1995-2001 shows it is difficult to agree on how much attention each part of the Convention should receive. Even within one part, Article X, it was hard to get the balance right between the so-called regulatory and promotional aspects of Article X. Different groups of States Parties had different priorities. At the outset in 1995 the UK and like-minded Western states obtained 50% of Ad Hoc Group agenda time for Compliance Measures. But they failed in repeated attempts (1994, 1996), as did South Africa, to get Verification upgraded in the mandate. Arguments about balance persisted in and after the Ad Hoc Group, erupting again and again in the intersessionals and at Review Conferences.

In the second part of his presentation, Sims considered whether a LBM is necessary to strengthen the BWC. He grouped the various arguments that have been put forward:

1. One group simply says 'Yes, the Convention as it stands is so defective that nothing short of an LBM will suffice, to make it work.' There has been a variety of solutions proposed among those who give this answer, with varying degrees of urgency.

2. Another group equally simply says 'No, if the Convention is given wholehearted support that will suffice.' For this group, it is only the conduct of States Parties in practice that really matters; in order to make the BWC work they just need to comply wholeheartedly with their existing obligations, not add new ones.

3. A third group says 'OK there are imperfections in the BWC but it's still workable, so let's see how far we can get with the existing treaty regime, flowing from the Convention as it stands without amendment or addition; let's strengthen it incrementally through extended understandings, agreed procedures and politically-binding commitments, all accumulated through successive Review Conferences and recorded in their Final Documents.'

The third, incremental-strengthening approach, has been used on: CBMs in 1986 and 1991; intersessional work programmes in 2002, 2006 and 2011; the ISU in 2006 and 2011; adding vice-chairmen for the intersessionals of 2012-2015; and

steadily accumulated understandings as Review Conferences examine individual Articles and record consensus on their interpretation and their implications, building on foundations laid in 1980.

These CBMs, procedural decisions and extended understandings all have the formal status of politically-binding commitments, not LBMs. Sims argued this does not matter: the incremental-strengthening approach does not distract attention from an LBM as a future option – early or more distant – and it doesn't rule it out. Some will see this approach as preferable to having any LBM; others as preparing the ground for early negotiation, and yet others for eventual negotiation, of a desirable LBM. Meanwhile, it takes the BWC forward.

Vladimir Ladanov

In May 2014, the Russian Federation surveyed States Parties about their views on resuming negotiations on a legally binding instrument to strengthen the BWC. The survey asked one question:

Are you in favour of strengthening the Convention based on a legally binding instrument to be developed and adopted by States Parties pursuant to the mandate agreed by consensus at the Special Conference in 1994, if not all States Parties to the Convention shall become Parties to the Protocol:

1. *Yes*
2. *Yes, but there are conditions (please specify, if possible)*
3. *No, but this may change depending on circumstances (please specify, if possible)*
4. *No*

Ladanov's presentation provided some background to the survey, noting in particular that the 1994 mandate was agreed by consensus, contains a lot of flexibility, and does not presuppose the outcome of negotiations or the shape of the future legally binding instrument.

In Russia's view the purpose of the instrument, or Protocol, is to generate added value for States Parties by strengthening the BWC and improving its implementation. Structurally, the Russian vision was of an implementing agency – the Organisation for the Prohibition of Biological Weapons (OPBW) – with a professional Technical Secretariat (TS) to deal with the tasks assigned to it, and policy-making organs (Executive Council and Conference) to supervise the implementation of the Protocol.

The OPBW would be responsible for:

1. Investigations of alleged use of biological and toxin weapons
2. Investigation of suspicious outbreaks of disease
3. Assistance and protection against biological and toxin weapons
4. Promoting international cooperation for peaceful purposes
5. Confidence building measures (existing or potentially enhanced formats)

6. National implementation
7. Monitoring science and technology developments

A number of advantages of the proposal were outlined, including the provision of a permanent forum for cooperation among States Parties; an institutional, non-discriminatory and inclusive institutional structure; and the pooling of resources for agreed and mutually beneficial purposes without requiring universal membership (States Parties may join if and when they decide to do so). Disadvantages identified were that routine compliance promotion measures (declarations and inspections/visits to dual use facilities) and challenge inspection procedures (field and facility investigations) initiated by one State Party against another are not implemented.

At the time of the presentation, Russia had received a total of 27 responses to its survey. Most of these had been written, some were verbal. Many favoured a resumption of Protocol negotiations. Only three responded negatively, one outright and two saying their view might change depending on circumstances.

Ben Steyn

Ben Steyn was part of the original Ad Hoc Group negotiating the Protocol in the 1990s. He opened his presentation by saying that while he still supports the Protocol, he does not believe that on its own it would work in today's context: Old concepts won't work.

Steyn highlighted two purposes for a LBM. The first is to analyse implementation, and he noted that to do this there must be some clarity and agreement on what implementation entails and implies. He outlined various elements essential to analysing implementation: declarations and a means to analyse declarations; onsite activities; the increasingly active role played by IOs, NGOs, industry, scientific community in the BWC environment; and an investigation capacity.

"Old concepts won't work."

The second purpose for a LBM is to coordinate cooperation and assistance. He noted that cooperation has two sides – it is about working together, not merely supplying and providing. He highlighted the importance of promotional aspects; the data base approach where offers are matched with requirements; and the role of 'formatted communication' as a replacement for CBMs. He also noted that public health is often neglected, and that a good public health system is the best way to ensure biological weapons are not developed.

Structurally, Steyn argued for a small organisation focused on 'declaration management' (which could include inspections), cooperation and assistance (like the OPCW), an executive mechanism (of rotating, elected members but not a 'council'), an intersessional process with decision-making power, and Review Conferences that move away from an Article-by-Article review and instead take on a stronger role as the highest decision-making body.

John Walker

John Walker was also part of the original Ad Hoc Group negotiating the Protocol in the 1990s. His presentation emphasised the significant technical and political challenges faced to move forward with strengthening the BWC.

He highlighted that during the Ad Hoc Group negotiations, States Parties were not willing to entertain the breadth and depth of the measures needed for effective verification, and that that situation has not changed today. In short: there is a mismatch between what's needed and what can be achieved.

In considering how the Protocol would pass muster today, Walker emphasised that it was a negotiated document with intertwining and interlinking sensitivities, a give and a take, and very reflective of its time. These calculations would be different in today's context. There have also been a number of other developments that have significantly changed the equation, in particular advances in science and technology.

Walker pointed to the importance of asking 'transparency and confidence building….of what?' and raised the question of how much detail would be required. Additional CBM information? Site visits?

He noted that the areas to be reflected in a LBM would need careful consideration. There's no need to duplicate work already done by the World Health Organisation, the World Organisation for Animal Health and the Food and Agriculture Organisation.

Dealing with the threat of bioweapons use requires a host of things and is not trivial. It is more challenging than just Article X. The Protocol was very much a creature of its time. It was originally thought the negotiations would take two years, they took six, and still failed. And it is important to remember that it was not just the US that had problems with the Protocol. The US decision let other countries off the hook. The process of getting the elements and balance right in a Protocol shouldn't be under-estimated.

Chris Park

Chris Park echoed many of John Walker's sentiments, reiterating the extent to which the Protocol was a package deal and that the difference of views hadn't gone away. He emphasised the lack of common understanding on what the goal of a LBM is and what is needed to get there. He also highlighted the lack of political will: The BWC is not assigned a high enough priority by governments to have the substantive debate you need.

Park also raised a number of pertinent questions: How do you encourage the political will to read and analyse declarations? What do you measure declarations against? How do you deal with the shift in threat focus away from states towards non-state actors?

Structurally, Park noted that allegations of use are dealt with through the UN Secretary General's mechanism, but that this urgently needs to be strengthened.

He emphasised that response capabilities to bioweapons use must be integrated with public health and humanitarian aid, and that any suspicions of use must be dealt with in

cooperation with the World Health Organisation. He suggested the Review Conference can establish a committee with a coordinating role for response and preparedness capabilities.

Key Themes

Confidence and compliance with the BWC encompasses a wide range of interlinked facets. This workshop focused on three key aspects and considered:

1. To what extent is the BWC verifiable?
2. Do the CBMs build confidence?
3. What would a legally-binding mechanism look like today?

The workshop provided a unique forum for cross-Group state party representatives, civil society experts, UN agencies and other BWC stakeholders to interact in an environment that facilitated a fruitful debate on these questions. The debate was stimulated through a mix of expert presentations, plenary discussion and dialogue in smaller break-out groups.

Verifiability

Unusually for an arms control treaty, the BWC was agreed without on-site verification mechanisms to deter or to safeguard against treaty violations. Some states maintain that the nature of biological weapons is such that they are inherently impossible to verify; others argue that while the same level of accuracy and reliability as the verification of, for example, nuclear arms control treaties is unattainable, it is possible to build a satisfactory level of confidence that biology is only used for peaceful purposes.

The set of presentations in the first session provided empirically rich detail about biological verification processes both in routine on-site inspections and in investigations of alleged BWC violations. The resounding response to whether the BWC is verifiable was "yes". It is possible for skilled inspectors to distinguish legitimate from cheating facilities while not compromising proprietary information; it is also possible to uncover a bioweapons programme even in situations where elaborate concealment strategies are deployed.

Confidence

Central to the compliance structure of the BWC are the confidence-building measures (CBMs) – the means by which States Parties disclose information annually. Improving this process was one of the key substantive topics of the last Review Conference in 2011, and has been an agenda item during the past two years of the intersessional process. Despite this, many perceive that the measures are not relevant for States Parties' security needs and that, as currently constituted, they do not provide useful information.

Approaching the question of whether CBMs build confidence from a new angle, session 2 explored the larger question of what 'confidence' in the BWC means for different people and states. For some, confidence in the BWC means knowing the Convention: is widely adhered to (universalization) without

significant gaps in coverage (to risks of proliferation), has an element of transparency and verifiability (to prevent cheaters), and is taken seriously by its member states (implemented nationally). Others emphasized that cheating must imply costs, and for some confidence in the BWC means a strong norm against the use and development of bioweapons, transparency of programmes and capacities, and mutual trust between States Parties and between States Parties and wider civil society.

Some of the practices and conditions that inhibit confidence in the CBMs were presented to encourage further thinking about confidence in the BWC context. These resonated with many of the workshop participants, and included: limited inquiry into and public testing of CBMs' content and purposes; lack of a mechanism for testing the veracity or completeness of CBM reports; CBMs limited accessibility; perception of low utility; and accusations of 'doing politics' directed at those who raise criticisms.

The response to the question "Do the CBMs build confidence?" that emerged from the workshop was "yes, the CBMs do build confidence and they are an important aspect of building confidence in the BWC, but CBMs should not be equated with confidence." In short, confidence-building goes beyond the CBMs.

A legally-binding mechanism

Over the years, there have been a number of proposals for a legally-binding mechanism to strengthen the BWC. These have varied greatly; most have been very general, few have gone into detail. The most significant was the draft Protocol negotiated by the Ad Hoc Group from 1995, but spectacularly rejected in 2001, which highlighting the significant technical and political challenges of developing a legally-binding mechanism.

Differences in approach to a legally-binding mechanism were also apparent at the workshop. A number of participants argued for a multilaterally negotiated, legally-binding and verifiable provision that would implement all articles of the Convention in a balanced and comprehensive manner. Some were more specific, arguing for an implementing agency – the Organisation for the Prohibition of Biological Weapons (OPBW) – responsible for investigating allegations of bioweapons use and suspicious disease outbreaks, assisting and protecting against bioweapons, promoting international cooperation, confidence building measure, national implementation and monitoring developments in science and technology. The OPBW would be supported by a professional Technical Secretariat and policy-making organs (Executive Council and Conference).

Others highlighted the different political, security and technical contexts of today arguing that "old concept won't work." New thinking is required, and two principal purposes for a legally binding mechanism were put forward: to analyse implementation and to coordinate cooperation and assistance.

Structurally, it was argued for a small organisation focused on 'declaration management' (which could include inspections), cooperation and assistance, an executive mechanism (of rotating, elected members but not a 'council'), an intersessional process with decision-making power, and Review Conferences that move away from an Article-by-Article review and instead take on a stronger role of the highest decision-making body.

Finding a middle ground, some acknowledged that there are imperfections in the BWC but that it is still workable. They argued not to amend or add to the Convention itself, but rather to strengthen it incrementally through extended understandings, agreed procedures and politically-binding commitments, all accumulated through successive Review Conference and recorded in their Final Documents.

Airing these differences in views and entering into dialogue about them well in advance of the upcoming Review Conference in 2016 was in large part the aim of this workshop. The positive feedback received on the workshop suggests a significant step was taken in that direction.

Feedback Received

Feedback from the workshop participants was overwhelmingly positive. The expert presentations, breakout discussion session, variety of view points and organization were repeatedly mentioned in the feedback forms as the best aspects of the workshop.

The vast majority of the participants (20 of the 21 who completed the questionnaire) said the workshop would have an impact on their future work. It was noted that the workshop provided "a better understanding of the challenges in the BWC environment" and that it helped inform preparations not only for the upcoming Meeting of Experts but, more importantly, for the 2016 review conference. One participant said, for instance, the workshop "helped me develop my thinking on how we can 'move' the BWC process to a more effective space."

For some, the workshop highlighted the need to think about the BWC differently. They commented: "Need for fresh thinking: too much BWC diplomacy is 'ritualised'." "Looking at the BWC from a more holistic point of view. Looking at old matters/issues with fresh eyes."

For others, the workshop was primarily an opportunity to learn more about the context around the BWC: "The discussions on the pros/cons of a legally binding mechanism and the historical perspectives filled a lot of my own knowledge gaps."

Summing up the day, one participant said it was "A good conversation between government representatives and practitioners/academics on ways and means to improve/ strengthen implementation of the BWC."

Workshop Programme

09:45	**Welcome**
	Dr Gustav Lindstrom, Geneva Centre for Security Policy, Switzerland
	Dr Matthew Rowland, Ambassador and Permanent Representative to the Conference on Disarmament, United Kingdom Mission to the United Nations in Geneva
10:00	**Session 1: To what extent is the BWC verifiable?**
	Dr Amy Smithson, James Martin Center for Nonproliferation Studies, USA
12:00	**Lunch**
13:00	**Session 2: Do the CBMs build confidence?**
	Prof Brian Rappert, University of Exeter, United Kingdom
	Dr Chandré Gould, Institute for Security Studies, South Africa
15:00	**Refreshments**
15:20	**Session 3: What would a legally-binding mechanism look like today?**
	Mr Nicholas Sims, London School of Economics, United Kingdom
17:00	**Close of the meeting**

The meeting was chaired by Dr Filippa Lentzos, King's College London.

List of Participants

Ms Kelly Anderson, Deputy Permanent Representative to the Conference on Disarmament, Permanent Mission of Canada to the United Nations in Geneva

Mr Kenneth Aoki, Senior Policy Officer, Office of Policy and Strategy, Organisation for the Prohibition of Chemical Weapons (OPCW), The Netherlands

Dr Adriana Bernacchi, Advisor, Scientific and Technical Research Institute for Defense, Ministry of Defense, Argentina

Mr Amri Bukhairi Bakhtiar, Counsellor, Permanent Mission of Malaysia to the United Nations in Geneva

Mr Irfan Mahmood Bokhari, Second Secretary, Permanent Mission of Pakistan to the United Nations in Geneva

Mr Marc Finaud, Senior Programme Advisor, Emerging Security Challenges Programme, Geneva Centre for Security Policy, and Senior Resident Fellow, United Nations Institute for Disarmament Research (UNIDIR), Switzerland

Dr Chandré Gould, Senior Research Fellow, Institute for Security Studies, South Africa

Mr Vladimir Ladanov, Counsellor, Non-Proliferation and Arms Control, Ministry for Foreign Affairs, Russian Federation

Dr Filippa Lentzos, Senior Research Fellow, Department of Social Science, Health & Medicine, King's College London, United Kingdom

Dr Gustav Lindstrom, Head of the Emerging Security Challenges Programme, Geneva Centre for Security Policy, Switzerland

Mr Ian McConville, Deputy Permanent Representative to the Conference on Disarmament, Permanent Mission of Australia to the United Nations in Geneva

Dr Piers Millett, Global Fellow, Woodrow Wilson International Center for Scholars, United States of America

Mr Siddhartha Nath, First Secretary, Permanent Mission of India to the United Nations in Geneva

Mr Chris Park, Director, Biological Policy Staff, Bureau of International Security and Non-proliferation, Department of State, United States of America

Col Peter Pauels, Military Adviser, Permanent Representation to the Conference on Disarmament, Permanent Mission of Germany to the United Nations in Geneva

Ms Lebogang Phihlela, Adviser, Non-proliferation Secretariat, Department of Trade and Industry, South Africa

Ms Paola Ramírez Valenzuela, Second Secretary, Permanent Mission of Mexico to the United Nations in Geneva

Prof Brian Rappert, Professor, Department of Sociology, Philosophy & Anthropology, University of Exeter, United Kingdom

Amb Matthew Rowland, Ambassador and Permanent Representative to the Conference on Disarmament, United Kingdom Mission to the United Nations in Geneva

Ms Nina Saraswati Djajaprawira, Minister Counsellor, Permanent Mission of Indonesia to the United Nations in Geneva

Mr Nicholas Sims, Emeritus Reader, Department of International Relations, London School of Economics, United Kingdom

Dr Amy Smithson, Senior Fellow, James Martin Center for Nonproliferation Studies, United States of America

Mr Scott Spence, Programme Director – National Implementation Measures, VERTIC, United Kingdom

Dr Ben Steyn, South African Council for the Non-Proliferation of Weapons of Mass Destruction, South Africa

Ms Naomi Takahashi, Biological and Chemical Weapons Conventions Division, Department of Disarmament, Non-Proliferation and Science, Ministry of Foreign Affairs, Japan

Dr John Walker, Arms Control and Disarmament Research Unit, Foreign and Commonwealth Office, United Kingdom

Lt Col Carol Walters, Special Assistant for Biodefense, Office of the Secretary of Defense, Department of Defense, United States of America

Ms Nana Watanabe, Adviser for Disarmament Affairs, Permanent Mission of Japan to the United Nations in Geneva

Speaker Biographies

Chandré Gould is a senior research fellow in the Crime and Justice Division of the Institute for Security Studies and editor of the journal *South African Crime Quarterly*. She has a DPhil in history from Rhodes University, South Africa. Between 1996 and 1999 she was an investigator and evidence analyst for the Truth and Reconciliation Commission, where she was involved in the investigation of Project Coast. After 1999 she continued research into Project Coast and co-authored a monograph published by the United Nations Institute for Disarmament Research, and numerous papers and articles. She co-authored Secrets and lies: Wouter Basson and the chemical and biological warfare programme (Zebra Press, 2002) about the trial of Dr Wouter Basson. Between 1996 and 2008 she was the global network co-ordinator for the Biological Weapons Prevention Project. She has been a member of South Africa's Council for the Non-Proliferation of Weapons of Mass Destruction (NPC) (2007–2010) and a member of the NPC's Biological Weapons Working Group since 2007.

Filippa Lentzos is a Senior Research Fellow in the Department of Social Science, Health and Medicine at King's College London. She is a sociologist interested in the intersection of political and security aspects of the life sciences. Her work has focused particularly on the Biological Weapons Convention and its meetings which she has been following for the last ten years and where she has been part of the joint efforts by states, civil society and the treaty secretariat to restructure avenues of engagement among its stakeholders.

Nicholas A. Sims holds an Emeritus Readership in International Relations from the London School of Economics & Political Science (LSE) in the University of London. He was a member of the LSE Department of International Relations from 1968 until retirement in 2010, specialising in disarmament and arms limitation treaties, verification, and international organisations. He has written on the BWC ever since it was under negotiation, with particular reference to its review and reinforcement, remedies for its institutional deficit, and most recently a Harvard Sussex Program Occasional Paper on BWC Article V and (with Graham S. Pearson) a Bradford Briefing Paper *Moving Forward Towards Consensus*. Earlier books include *The Diplomacy of Biological Disarmament* (1988), *The Evolution of Biological Disarmament* (2001) and *The Future of Biological Disarmament* (2009). His involvement with the BWC derives from a life-long commitment to the enterprise of disarmament and a continuing interest in the interaction of science, law and diplomacy to strengthen the BWC treaty regime.

Amy E. Smithson is a Senior Fellow at the James Martin Center for Nonproliferation Studies. She specializes in in-depth field research on issues related to dual-use chemical and biological technologies, weapons proliferation, threat reduction mechanisms, defense, and homeland security. She has addressed such topics as the chemical and biological weapons proliferation concerns, the status of international treaties outlawing these weapons, and preparedness for biological and chemical disasters. Often fashioning untraditional issue alliances that cross the private and public sectors and international borders, Smithson's work

recommends practical steps that blend technical and policy instruments to reduce threats and to enhance civilian and military defense, preparedness, and response capabilities. Smithson's work has prompted numerous invitations to testify before Congress, and she has frequently assisted the electronic and print media. One of her latest works, *Germ Gambits: The Bioweapons Dilemma, Iraq and Beyond*, debunks myths about how United Nations Special Commission inspectors uncovered Iraq's covert bioweapons program after the 1991 Gulf War.

Brian Rappert is Professor of Science, Technology and Public Affairs in the Department of Sociology and Philosophy at the University of Exeter. His long-term interest has been the examination of the strategic management of information, particularly in relation to armed conflict. His books include *Controlling the weapons of war: politics, persuasion, and the prohibition of inhumanity*; *Technology & security* (co-ed), *Biotechnology, security and the search for limits* and *Education and ethics in the life sciences* (ANU E-Press). More recently he has focused on the social, ethical, and epistemological issues associated with researching and writing about secrets, as in his book *Experimental secrets* (2009) and *How to look good in a war* (2012).